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OCT 27 2006

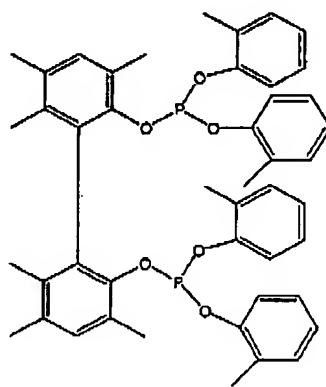
Appl. No. 10/695,015
Attorney Docket PYI330USNA
Amendment/Reply with RCEAmendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A process for hydrocyanation of at least one substrate selected from the group consisting of 2-pentenenitrile, 3-pentenenitrile, 4-pentenenitrile, and 2-methyl-3-butenenitrile comprising contacting the substrate with hydrogen cyanide in the presence of a zero-valent nickel hydrocyanation catalyst and a promoter, wherein said promoter is a byproduct of a method for producing titanium tetrachloride from titanium ore, said method comprising the steps of contacting a titanium-containing ore with chlorine under reducing conditions to obtain a gaseous reaction product, recovering titanium tetrachloride from the reaction product, thereby leaving behind a residue, and condensing the residue to obtain said byproduct, and wherein said byproduct comprises at least one compound selected from the group consisting of iron (II) chloride and manganese (II) chloride.
2. (New) A process comprising:
 - a) chlorinating a titanium-containing material to produce material comprising titanium tetrachloride and other iron-based chlorides;
 - b) separating the titanium tetrachloride;
 - c) obtaining a byproduct material comprising iron-based chlorides;
 - d) using the byproduct material as a promoter in a process for hydrocyanation, said hydrocyanation process comprising contacting at least one substrate selected from the group consisting of 2-pentenenitrile, 3-pentenenitrile, 4-pentenenitrile, and 2-methyl-3-butenenitrile with hydrogen cyanide in the presence of a zero-valent nickel hydrocyanation catalyst and the promoter.
3. (New) The process of claim 2, wherein the substrate is 2-pentenenitrile.

4. (New) The process of claim 2, wherein the substrate is 3-pentenenitrile.
5. (New) The process of claim 2, wherein the substrate is 4-pentenenitrile.
6. (New) The process of claim 2, wherein the substrate is 2-methyl-3-butenenitrile.
7. (New) The process of claim 2, wherein the byproduct material comprises iron(II) chloride and manganese(II) chloride.
8. (New) The process of claim 2, wherein chlorinating a titanium-containing material is performed in a fluidized bed reactor.
9. (New) The process of claim 2, wherein the byproduct material is used in a process for hydrocyanation without prior purification or separation.
10. (New) The process of claim 2, wherein the nickel hydrocyanation catalyst comprises a bidentate phosphite ligand.
11. (New) The process of claim 1, wherein the nickel hydrocyanation catalyst comprises the bidentate phosphite ligand having the formula



12. (New) A process comprising:

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reacting 2-methyl-3-butenenitrile with hydrogen cyanide to produce 2-methylglutaronitrile in the presence of a zero-valent nickel catalyst and a promoter obtained as a byproduct from a titanium ore chlorination process.

13. (New) A process comprising:

reacting a mixture of pentenenitriles with hydrogen cyanide to produce both adiponitrile and 2-methylglutaronitrile in the presence of a zero-valent nickel catalyst and a promoter obtained as a byproduct from a titanium ore chlorination process.